In the Claims

This listing of claims replaces all prior versions and listings of claims:

1. (Currently amended) An audio-information encoding apparatus for dividing an audio signal on a time axis into blocks for every predetermined time period, frequency transforming and encoding each block, said apparatus comprising:

a white-noise ~~analyzing means that analyzes~~ level determining unit for: (i) determining, for each block, a white-noise level of an extracted white-noise component of a frequency transformed audio signal and generating a first index by quantizing the white-noise ~~component~~ level contained in the audio signal; and, (ii) generating a second index designating a start location of a random-number table adapted to generate a white-noise component in a decoding side; and

~~white-noise~~ an encoding ~~means~~ unit that encodes [[an]] , for each block, (i) a quantized value resulting from normalization and quantization of the frequency transformed audio signal, (ii) the first index ~~indicating~~ , and (iii) the ~~energy level of the white-noise component analyzed by the white-noise analyzing means~~ second index.

2. (Currently amended) The audio-information encoding apparatus according to claim 1, wherein the white-noise ~~analyzing means analyzes~~ level determining unit determines the white-noise ~~component~~ level based on the ~~basis of the~~ energy distribution at the high-band part of the block.

3. (Currently amended) The audio-information encoding apparatus according to claim 1, wherein the white-noise ~~analyzing means analyzes~~ level determining unit determines the white-noise ~~component~~ level based on the ~~basis of the~~ energy distribution of the entire block.

4. (Canceled)

5. (Previously presented) The audio-information encoding apparatus according to claim

1, further comprising gain-control means that controls the gain of the audio signal on the time axis.

6. (Currently amended) An audio-information encoding method for dividing an audio signal on a time axis into blocks for every predetermined time period, frequency transforming and encoding each block, the method comprising:

determining, for each block, a white-noise ~~analyzing step~~ level of ~~analyzing a~~ an extracted white-noise component ~~contained in the~~ of a frequency transformed audio signal;

generating a first index by quantizing the white-noise level contained in the audio signal, and a second index designating a start location of a random-number table adapted to generate a white-noise component in a decoding side; and

~~a white-noise encoding step of~~ encoding, for each block, [[an]] (i) a quantized value resulting from normalization and quantization of the frequency transformed audio signal, (ii) the first index ~~indicating~~ , and (iii) the ~~energy level of the white-noise component analyzed in the white-noise analyzing step~~ second index, wherein

said determining and generating steps are performed by a white-noise level determining unit and said encoding step is performed by an encoding unit.

7. (Canceled) The audio-information encoding method according to claim 6, wherein an index of a random-number table that is used to generate a white-noise component in a decoding side is further encoded in the white-noise encoding step.

8. (Currently amended) A computer program product, comprising ~~that causes~~ a computer usable medium having a computer readable program code embodied therein, said computer readable program code adapted to perform an audio-information encoding process of dividing an audio signal on a time axis into blocks for every predetermined time period, frequency transforming and encoding each block, the ~~program having~~ process comprising:

determining, for each block, a white-noise ~~analyzing step~~ level of ~~analyzing a~~ an extracted white-noise component ~~contained in the~~ of a frequency transformed audio signal;

generating a first index by quantizing the white-noise level contained in the audio signal, and a second index designating a start location of a random-number table adapted to generate a white-noise component in a decoding side; and

~~a white-noise encoding step of~~ encoding, for each block, [[an]] (i) a quantized value resulting from normalization and quantization of the frequency transformed audio signal, (ii) the first index ~~indicating~~ , and (iii) the ~~energy level of the white-noise component analyzed in the white-noise analyzing step~~ second index.

9-11. (Canceled)

12. (Currently amended) An audio-information decoding apparatus for decoding an encoded frequency signal, inverse frequency transforming the decoded frequency signal, thereby generating an audio signal on a time axis, said apparatus comprising:

a white-noise generating ~~means~~ unit that generates a white-noise component on the time axis, based on ~~the basis of an~~ (i) a first encoded index indicating the energy level of the white-noise component and (ii) a second encoded index designating a start location of a random-number table; and

~~adding means~~ an adder that adds the audio signal ~~generated on the time axis by means of the inverse frequency transformation~~ and the white-noise component on the time axis.

13. (Canceled)

14. (Currently amended) The audio-information decoding apparatus according to claim 12, wherein the white-noise generating ~~means~~ unit generates the white-noise component based on ~~the basis of~~ a specific value contained in a code train.

15. (Currently amended) The audio-information decoding apparatus according to claim

14, wherein the specific value is at least one of normalization information [[or]] and quantization precision information.

16. (Currently amended) The audio-information decoding apparatus according to claim 12, ~~which~~ further comprising gain compensating means that compensates for the gain of the audio signal ~~obtained, on the time axis, by means of the inverse frequency transformation~~, wherein the ~~adding means~~ adder adds the audio signal on the time axis, thus gain-compensated, and the white-noise component on the time axis.

17. (Currently amended) An audio-information decoding method for decoding an encoded frequency signal, inverse frequency transforming the decoded frequency signal, thereby generating an audio signal on a time axis, said method comprising:

~~a white-noise generating step of~~ generating a white-noise component on the time axis, based on ~~the basis of an~~ (i) a first encoded index indicating the energy level of the white-noise component and (ii) a second encoded index designating a start location of a random-number table; and

~~an adding step of~~ adding the audio signal ~~generated on the time axis by means of the inverse frequency transformation~~ and the white-noise component on the time axis, wherein

said generating step is performed by a white-noise generating unit, and said adding step is performed by an adder.

18. (Currently amended) A computer program product, comprising ~~that causes~~ a computer usable medium having a computer readable program code embodied therein, said computer readable program code adapted to perform an audio-information decoding process of decoding an encoded frequency signal, inverse frequency transforming the decoded frequency signal, thereby generating an audio signal on a time axis, said ~~program having~~ process comprising:

~~a white-noise generating step of~~ generating a white-noise component on the time axis,

based on ~~the basis of an~~ (i) a first encoded index indicating the energy level of the white-noise component and (ii) a second encoded index designating a start location of a random-number table; and

~~an adding step of~~ adding the audio signal ~~generated on the time axis by means of the inverse frequency transformation~~ and the white-noise component on the time axis.